Stat and Data Analysis Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7.2 CW Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For each problem show all proper notation and work required.**

1. At a local college the registrar found that of the incoming class of freshman 23% will major in Business, 27% major in Education, 13% major in Math/Science, and 18% are undecided.
   1. Create the probability model for a random selected freshman.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Major |  |  |  |  |  |
| Probability |  |  |  |  |  |

* 1. What is the probability that a randomly selected freshman is:
     1. majoring in education or business?
     2. not an undecided major?
     3. not majoring in Math/Science nor in Business?

1. A simple carnival game has been set up with a standard deck of cards. If you randomly select a card and it is the Ace of Hearts, you win $500. If the card is any other Ace you win $25. If it is any other Heart you win $10. If it is any other Spade you win $5. Otherwise you win nothing.
   1. Create the probability model for 1 play of the game.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Amount Won |  |  |  |  |  |
| Probability |  |  |  |  |  |

* 1. What is the probability you would win some money?
  2. What is the probability that you win at least 25$?
  3. What is the probability that you win no more than $25?
  4. What is the probability that you win $5 or $500?

1. At a local high school there are a total of 145 teachers in the school. Of those 59 are males, 17 are math teachers, and 9 are male math teachers.
   1. Fill in the following two-way table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Subject** | |  |
|  |  | Math | Not Math | Total |
| **Sex** | Male |  |  |  |
|  | Female |  |  |  |
|  | Total |  |  |  |

* 1. What is the probability that a randomly selected teacher is:
     1. Male
     2. Not a Math teacher
     3. Female and a Math teacher
     4. Female or a Math teacher
     5. Male or not a Math teacher
  2. Create a Venn Diagram of the probabilities of male and math teacher. Round to 2 decimal places.

1. In a game you roll two standard dice, one is blue and the other red. When you roll the dice you subtract the score on the face of the Red die by the score on the face of the Blue die.
   1. Create a probability model for your score on 1 roll of the die.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Score |  |  |  |  |  |  |  |  |  |  |  |
| Probability |  |  |  |  |  |  |  |  |  |  |  |

* 1. What is the probability that:
     1. you would have a positive score
     2. you would have a negative score
     3. your score would be at most 1